Musical Education in India and its Future (with Particular Stress on Notation)

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Until about a few decades ago, the continuity and spread of musical education in India had been admirably maintained by reputed music exponents and other devoted individuals under the traditional unitary system of 'teacher-pupil' basis.

The training being essentially through the practice of oral instruction, this highly individualistic system of close contact between teacher and pupil undoubtedly had some definite advantages on the practical side, but at the same time certain drawbacks too on the theoretical side.

Due to lack of scholarship and a sense of historical perspective, these unacademic units tended towards confused interpretations and even abandonment of Bharata Muni's *gramas* and Sharngadeva's *shrutis*—the very acoustic fundamentals of two of the most scientific scalic systems ever invented in the world history of music.

Therefore, in the absence of a standard and scientific system of notation as also of a library of notated music of the past to fall back upon, each of these teaching units differed in its style, rendering, methodology and conventions.

Province-wise, each such unitary school or *gharana* established its own style and method, strongly dominated by the personality of its founder; and the descendants of these *gharanas* in their turn further intensified and accentuated these differences.

Despite all this dissimilarity of detail, however, the basic rudiments and terminology of Indian musical theory have remained to this day fairly constant, empirically. This essential unity still persists even in the two main Hindustani and Carnatic systems of India, despite their diversity of nomenclature, standards, and classificatory schemes.

Evidently, an educational system that served the purpose of a semi-feudal society of pre-industrial days was inadequate to meet the requirements of modern collectivist society. So, during the last fifty years, organized music institutions were established, notably in the big industrialized cities, under the impact of new social forces.

Numerous schools and colleges introduced classes with regular music curricula while various Indian universities prescribed syllabi for their faculties of fine arts. In the wake of All India Radio broadcasting programmes of classical, light, and folk music to the homes of Indian people, there sprang up regional music academies everywhere in the country.

From the beginning of this century, pioneering work had been done notably by two enlightened educationists on their own initiative for the revival of Hindustani music. One of them was Pandit Vishnu Digambar, the renowned vocalist, stylist and teacher, who almost with a missionary zeal devoted his entire life for the uplift of Hindustani music. He founded the Gandharva Mahavidyalaya and was mainly responsible for retrieving Indian music from the chaotic state into which it had fallen.

The other was Pandit V.N. Bhatkhande, the eminent scholar, pedagogue and musicologist, who dedicated his life to untiring research and investigation. He invented a notation system and tabulated the *thaths* and ragas into a classificatory system. Pandit Bhatkhande also published the *Hindustani Sangit Paddhati*, containing a great variety of ragas, some of which are simplified in the form of *lakshana geeta*.

Educationists owe a great debt of gratitude to Pandit Bhatkhande for his monumental works which as textbooks have proved a great boon to present-day students. However much one may disagree with the theoretical portion of his work, and for whatever valid reasons, his great service to the cause of Hindustani music must be duly recognized.

Like all pioneering reformers and revolutionaries, Pandit Bhatkhande met with fierce opposition from his critics on various grounds. Whether he fell for the facile temptation of adopting the Western scale or whether he was pressed by the urgency of reform, his over-simplification of the scale into twelve divisions can now be easily rectified.

On lines somewhat parallel to *Hindustani Paddhati*, A. Chinaswami Mudaliar had already given the lead in Madras for the revival of Carnatic music towards the end of the nineteenth century. He published in 1892 what must have been a very enterprising venture in those days, his periodical *Oriental Music*, explaining the 72 *melakartas* and illustrating the ragas with extensive examples in Western notation with the words in English, Telugu and Tamil characters.

If the need was always there, it has now become imperative—the need for coordinating the theoretical data and pedagogical methods, and most of all for standardizing the notation system in the new context of national music.

Regional variations of style will always be there and it is even desirable that they should be there. Progressive musical interpretations should be encouraged. But the time has definitely come for the establishment of a sound educational policy that will uniformize, to begin with, the very medium through which music may be taught and written with efficiency and economy.

In order that it may be easily adaptable, such a standard medium of national notation will have to possess the following prerequisites:

(a) It will have to preserve the continuity of the usage of phonetic syllables;

(b) it will have to be efficient and accurate, and yet simple, practical and in conformity with the traditional *sa-ri-ga-ma* syllables used so far—albeit with slight variations of vowel-endings to indicate the exact shade of intonation; and

(c) it will have to be consistent with the theoretical legacy we have inherited from the past, i.e., based on the system of *gramas* and *shrutis*—not because it is Indian but because it conforms to acoustic principles and is scientific.

Thus we shall have demonstrated that India was not only the first and earliest to formulate the system in theory but also the last to perfect it phonetically in practice.

The principal defect in the current *sa-ri-ga-ma* system of Hindustani music is that it is syllabic; the same seven syllables are used to intone the seven *shuddha svaras*, as well as the 15 other shades of the *vikrita svaras*.

The varieties of *thaths* and ragas in the current system are committed to memory by the long and laborious process of memory-training, involving years of unnecessary waste of time and energy. The circuitous process of teaching music unduly taxes the mental faculties of a student and, in the case of a child, it is definitely a cruel infliction on its tender memory.

Comparatively, the older *murchhana* system of classifying the *jatis* into *sadhji, rishabhi, gandhari,* etc., was a much more efficient method of teaching music. But now that the convention of taking the first note of a scale as *shadja* has come to stay, the only solution out of the illogical system is to convert it into a phonetic notation utilizing the existing syllables unchanged in their logical places.

The teaching of *thaths* and ragas through the old syllabic system absorbs so much of the initial training period that the student takes a long time before he reaches the stage of wielding the actual technique of music-making.

Of course, oral instruction and memory-training are indispensable for teaching an art like music, but it must be through the efficient and logical method of associating the ear to the phonology of tonal intervals. And if music is to be introduced in schools as an optional subject in the general syllabus, it can only be through the phonetic system.

All Indian languages are phonetic and hence their superior efficiency in spelling over the non-phonetic English language, for instance. The first three years of a student of English language are spent in getting over the hurdle of its illogical orthography; and even advanced students in later years can never really master the uncertainties and absurdities of English spelling; whereas the spelling and reading of a phonetic language like Italian can easily be mastered within about three months.

It is often believed that one syllabic notation like the present Indian system is sufficient both for the purpose of singing music and writing it. It is hardly realized that two or more subsidiary types of notation are simultaneously necessary for one and the same system.

One phonetic notation at least is required for vocalizing the intonation, as in singing, and another symbolic code of it for instrumentation. The notes may have long syllabic names for vocalization, but at the same time they must have a short symbolic code, just as we have longhand and shorthand in language-writing. The same phonetic notation, if used both for singing and instrumentation, can be unwieldy, slow, and inefficient for the latter purpose, at least in advanced instrumental music.

For instance, the following four forms of complementary types are used for different purposes in the Western system of notation: (1) the alphabetic, (2) the syllabic, (3) the phonetic, and (4) the graphic.

The Alphabetic

This is the fixed A-B-C system used in England and America. The staff-notation is reckoned by these alphabetic letters as on a typewriter, but not necessarily intoned. It is efficient and suitable for sight-playing music of keyboard instruments like the pianoforte and the organ. *Vikrita* notes like *komal Ri* and *tivra Ma* are indicated as D flat and F sharp.

The Syllabic

Similar to the fixed alphabetic, this is an immovable Do-Re-Mi system widely used in the Continent of Europe. As in the present Indian syllabic system, *komal Ri* and *tivra Ma* would be *Re bemol* and *Fa diese*. It is useful for reckoning staff-notation of instrumental music. The names of notes do not change in transposition.

The Phonetic

This is a moveable syllabo-phonetic Do-Re-Mi system, otherwise known as the Solfa-Tonic system, wherein intonation changes of *vikrita* notes are indicated by corresponding changes in vowel endings. Thus Fa, Fe would correspond to the new Indian phonetic syllables *Ma, Me-Komal* and *tivra madhyam* respectively. This system is also used for transposition and modulation, as when the tonic Do (*Sa*) shifts on to a new pitch-level. It is excellent for singing purposes and very efficient for sight-singing and sight-reading of melodies.

The Graphic

This international staff-notation system, wherein notes are indicated by graphic symbols, automatically picturizes the pitch-level of high and low notes as well as their time-values. This is a great advantage particularly in perpendicular chord writing. This system is universally used today by all nations.

In the West, these four types of notation are used concurrently in connection with the staff notation. The alphabetic and the syllabic, which are synonymous, are used in theoretical music, the phonetic in vocal music, and the graphic staff-notation in instrumental as well as vocal and theoretical music.

The only drawback in the four concurrent types of notation described above is that they indicate correctly (through unscientifically) only 12 out of the 22 *shrutis* of the Indian system. They indicate theoretically, besides the 7 diatonic (*shuddha*) notes of the Bilaval scale (scale of Zarlino), the *tivra madhyam* and the *komal* varieties of *rishabh, gandhar dhaivat*, and *nishad*.

As a matter of fact, the only true 12-*shruti* chromatic scale of the West is absolutely identical with the Indian 12-*shruti* limited scale in which *Sa* and *Pa* remain *achal*, and besides the remaining five *shuddha* notes, *madhyam* becomes *tivra* and the rest *komal*.

The commonly held belief that the 12 notes of the Western chromatic scale cannot render in true pitch the notes used in Indian music is erroneous. Because this would amount to saying that Western music is not based on acoustic principles of consonance. This view is true, however, only so far as it refers to the tempered scale of keyboard instruments like the pianoforte, the organ, and the harmonium, wherein all the 12 *shrutis* are out of pitch, except the tonic *Shadja*. But this is admitted by Westerners themselves who use keyboard instruments merely for the convenience of easy modulation. For the purpose of vocal and symphonic music, however, Western music strictly adheres to the 12-*shruti* system of the true chromatic scale.

Though, in theory, Western musicians teach only the 12-*shruti* scale equating *komal* with *atikomal* and *tivra* with *tar-tivra*, in practice they inadvertently use all the 22 *shrutis* in their performances.

It must be remembered, however, that 22 *shrutis* are neither an ideal number nor are they the maximum possible, but they are only a practical minimum used in unmodulated music. The double sharps and double flats used in Western music are not taken into consideration here, as they occur only in modulatory shifts of the tonic-level. Double sharps and flats are not the same thing as *tar-tivra* and *atikomal* as some theorists have mistakenly equated them.

Again, the Western string instruments are so constructed in perfect fifths upwards that they can modulate and play best in sharp keys, whereas military band instruments can modulate easily downwards and play correctly in flat keys. There is no musical instrument yet invented that can do this easily either way, except the human voice. Bharata Muni was the earliest in history to have foreseen this when he established the twin fundamental necessity of the complementary *Sa* and *Ma gramas*, i.e., in modern times the twin necessity of the *tivra dhaivat* of Bilaval and the *tar-tivra dhaivat* of Behag.

It is important that our students acquire a sense of historical perspective and acquaint themselves with the momentous contributions Indian musicologists had made in the past. The greatest historical significance of the *Natya Shastra* lies in the fact that Bharata Muni in his *madhyam grama* had tabulated the universal scale for all times about 15 centuries before it was discovered in the West by Zarlino in 1560. This scale of Zarlino corresponds to the Bilaval *thath* of Indian music.

The prevalent belief among musicologists is that there is no such thing as a universal scale since different countries use different standard scales. It is a great mistake to think so. Both in the East and the West, different countries at different periods of history had abandoned the fundamental scale as being vulgar and on the border of eroticism, and had adopted instead other *murchhanas* of the same basic scale as the standard *thaths*.

Thus Kafi and Bhairavi were selected as being nobler and holier in expression. No matter what *murchhana* or mode is chosen as the standard scale, the fact remains that all these *murchhanas* are derived from the same circle of the basic universal scale—the only scientific scale harmonically possible, being based on the two fundamental consonances of *swayambhu pancham* and *swayambhu gandhar*.

The whole musical civilization of mankind may be said to have belonged to two distinct periods:

(1) The pre-Buddhist *Pancham* period, and

(2) The post-Buddhist *Gandhar* period.

To the first, *Pancham*, period belong the Chinese pentatonic scales, the Pythagorean scales of Greece, and our own Odava scales of Bhoopali variety.

To the second, *Gandhar*; period belong most of the advanced musical systems of the world today. These are, in fact, built on the *Pancham-Gandhar* combination.

The *swayambhu gandhar* was first discovered in India, as it is mentioned in *Rukpratishakya* and in the *Naradiyashiksha* at least a couple of centuries before Aristoxenus, the Greek musician, introduced it in his scale in 400 BC.

There is only one universal scale, and that is Bharata Muni's. Other *thaths* or parent-scales are either *murchhana*-derivatives or modifications of the basic scale. And, finally, Sharngadeva's *shruti* system is nothing but the result of superimposition of the *murchhanas* of *jatis*—all taken as starting from the same pitch-point.

The third stage of civilization would be the *swayambhu nishad* period. It is a post-Sharngadeva development in which India has again given the lead. The relativity and ratios in the scale are mostly septimal. This gives rise to new consonances which are not used in any other musical system anywhere. The dissonant diminished fifth interval is thereby turned into a consonant one. The Todi raga sung by Abdul Karim Khan and others of his *gharana* belongs to this *saptakomal* variety. This has aroused great interest in the West, for it is indeed another great contribution of India.

Since India invented the mathematical number zero, there has been no greater contribution by India to the rest of the world than Bharata Muni's universal scale and Sharngadeva's *shruti* system, which is now being recognized as the world's most scientific scalic system.

While the West is eager to learn and profit by the findings of Eastern countries, Indian musicians should admit and assimilate the principles of harmonization, which is one of the greatest musical achievements of the West.

Harmony is based on laws of consonance which are universal. The theory of consonance, *samvaditva*, is described in the *Mahabharata*, while the same was applied in Europe from the 14th century AD.

Indian music employs these laws in linear harmony, drone or pedal harmony, and vadi harmony. Having always been intensely individualistic, Indian music had so far not applied these laws of consonance to multiple-horizontal and perpendicular harmony.

The four concurrent types of Western notation described above, some of which are redundant, could be condensed into only two principal types for the purpose of Indian music:

(1) The syllabo-phonetic notation, embodying the 22 *shrutis* for vocal and theoretical music; and

(2) the altered staff-notation for concerted instrumental and vocal music, both Indian and foreign.

The Syllabo-Phonetic Notation

A short description of this phonetic system of Indian music will now be given. Though simple and practical, it embodies all the finer nuances of *shruti*-intonation and can increase hundredfold the teaching efficiency of Indian music institutions.

In this notation, *Sa* and *Pa* are fixed (*achal*). The remaining five *vikrita* notes of the *saptak*, namely, *Rishabh, Gandhar, Madhyam, Dhaivat* and *Nishad,* have four varieties of intonation each, and these are denoted in their increasing degree of sharpness by incorporating or suffixing the vowels O, A, E, I in the root-name of the note.

The four shades of intonation of *Rishabh,* for instance, would be *Ro, Ra, Re, Ri.* The phonetic syllables would represent the *atikomal, komal, tivra* and *tar-tivra* places of that note, and they will be between them, starting from *Sa,* the following *shruti* intervals expressed in cents:

Sa	90	*Ro*	22	*Ra*	70	*Re*	22	*Ri*
(*Tonic*)		(*Atikomal*)		(*Komal*)		(*Tivra*)		(*Tar-tivra*)

Likewise, the four varieties of *Gandhar* would be *Go, Ga, Ge, Gi.*

The interval of 22 cents is the same as the *pramana shruti* of Bharata or the Comma of Dydimus.

Thus the *dwishruti* syllable *Ra,* standing at the distance of a diatonic semitone or 112 cents from Sa, or bearing a vibration ratio of 16/15 with it, would represent the *komal Rishabh* of the Hindustani system or the *shuddha Rishabh* of the Carnatic system.

Similarly, the syllable Ri would be the same as *Shudh Rishabh* or *chaturshruti Rishabh* of the Hindustani and Carnatic systems respectively.

The four vowels in their increasing degrees of sharpness are verified and justified by electronic graphs of these vowels. While the vowel 'o' gives a smooth and even graph, the vowel 'i' gives a sharp and serrate one.

The two *shrutis* immediately before and after the *achal Sa,* and the two *shrutis* before and after the *achal Pa,* sometimes suffer a slight change as in the case of Marva *thath* and the septimal Todi. The syllabi-phonetic notation provides for these rare and exceptional cases.

In transitional and modulatory Western music, the notes *Ri, Dhi,* etc., often take the place of a new *madhyam.* The phonetic notation also provides for the ultra-sharp varieties of these notes by using the syllables *Ru, Dhu,* etc.

The Altered Staff-notation

As the staff-notation perfectly serves the purpose of 12 out of the 22 *shrutis,* the Altered Staff-notation provides a thicker-type flat and sharp for the *atikomal* and *tar-tivra* notes.

Another diacritical sign in the key-signature, such as is used to indicate an angle in geometry, alters the *shuddha* note by a *pramana shruti.*

FUTURE OF MUSICAL EDUCATION

The future of musical education in India will depend upon how teaching methods and school syllabi are oriented. This orientation will have to be regulated by directives given either by some centralized institution or by educationists themselves through well-organized seminars and conferences. Only a pooling of the knowledge and experience of school principals can coordinate a sound and uniform educational policy.

A comprehensive and integrated course of musical study should be well balanced, so as to include all existing categories of practical music: (1) Folk Music, (2) Light Music, (3) Devotional Music, (4) Popular Music, (5) Modern Music, (6) Operatic Music, (7) Classical Music, and (8) Old Classical Music.

Separate subjects in graded courses should include the following:

(a) Theory of Music;
(b) Rhythm and Percussion;
(c) History of Music;
(d) Form and Composition of Music;
(e) Aesthetic of Music; and
(f) Art of Teaching.

Instrumental technique and voice production would be special subjects for instrumental and vocal students respectively.

All this presupposes, of course, that a mastery of Indian phonetic notation and/or the International Staff Notation, both for reading and writing music, has already been obtained by students at the primary stages of education. It also presupposes that music textbooks with printed notation containing specimens of all the seven categories of music mentioned above will have been made available by then.

Simple specimens of Dhrupad, Thumri and even the Khayal style, which is supposed to belong to the class of extempore improvisation, should be made available in printed notation for critical analysis and study by future students. Specialized and advanced graduation courses will have to include Harmony, Counterpoint, Orchestration and Comparative Study of Musical Systems.

It is contended that classical Indian music of the *Khayal* style is unnotatable. This is a misconception. It is a case of mixing up causes and effects. As obtaining in India, this style is undoubtedly a unique type of musical development wherein an ideation of mood is sought to be expressed by means of a set scale and set conventions of extemporized melody within a set metre. It is a musical heritage that India may justly be proud of. It must be preserved and cultivated.

But it is difficult at this stage to analyze what set of circumstances, historical, social, or cultural, might have occasioned this style. One might as well postulate the thesis that this intense development of extemporized music was itself caused by the absence of notation. It would be idle to speculate today how limited or how advanced the improvising efforts of ancient poets would have been, if the subsequent invention of the alphabet had not made literary epics possible.

Notated specimens of contemporary music are not intended to preserve and record the music of a period, so that it may serve as a reference guide for future students. Western classical music, whether polyphonic, contrapuntal, or homophonic, is available at present in notated form right from the 15th century onwards. Though the moderns may not compose in the same idiom any more, all those old styles are still cultivated and performed.

It is beyond the scope of this paper to delineate an educational plan. The syllabi prescribed at various schools and colleges in India are adequate as far as they go. This paper has, therefore, only attempted to clear certain misconceptions and other uncritical prejudices that have impeded in the past the implementation of a sound educational policy and are likely to withhold the potential progress of Indian music in the future.

The whole future of Indian music will depend upon the notation system, which will have to be a combination of the phonetic and the staff notation. The phonetic notation, like the solfa-tonic system, is intended primarily to tune the ear and the voice, and to enable the student to sing and write simple melodies correctly. But the complex fabric of the future Indian music to come can only be possible through the international staff notation.

However differently a syllable may be written or spelt by different nations, intercontinental transmission of it can only be through the international telegraphic Morse code.

During the last five hundred years since adopting the staff notation, Western music has made tremendous progress in building up its gigantic musical structure. One can safely make the assertion that not even one-millionth of that progress would have been possible were it not for the staff notation.

Pressed by the exigencies of modern times, the Indian broadcasting, film, and gramophone companies are already having music of predetermined length, form, and texture composed and notated for concerted performances. There is no reason why Indian music schools should not train their students to meet this growing contingency. Further, the character and style of Indian music cannot be affected by the adoption of more effective foreign instruments like the microphone and the violin, because, after all, they are only the media through which the music is conveyed.

The argument that Indian music is unnotatable can easily be dismissed. It must not be forgotten that a musical notation, like all literary scripts, can at best be only skeletonic, lifeless and meaningless without the teacher and tradition to guide the student in the early stages in associating and articulating the sounds of the written code. The re-interpretation and re-creation will always belong to the performer.

Once the two concurrent systems of phonetic notation and staff notation are firmly rooted, a scientific medium for teaching and composing music will have been found.

What form the future national music of India will take or what style it will develop, it is difficult at this stage to prophecy. Overzealous parents are known to have crippled the creative initiative of their children by dictating to them their own pet notions.The future Indian musicians and composers who will react to the social, historical, and cultural influences of the times to come will alone decide the issue.

Meanwhile, educationists, grammarians, musicologists, anthologists, theoreticians, publishers, authors and critics will only tabulate the musical data, provide the notation media, and canalize the educational facilities. They will teach the student only the music of the past and the present so that he may learn and decide for himself how to make the music of the future.